

Central Intelligence Agency

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Washington, D.C. 20505

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Directorate of Intelligence

5 November 1986

Hungarian Interest in Western-Manufactured Civil AircraftSUMMARY

Faced with a fleet of aging Soviet-manufactured civil aircraft and the need to conform with stricter aircraft noise rules in Western Europe by January 1988 Hungary's national airline, MALEV, must soon update its airfleet or cut back service to this important market. The unavailability of suitable replacements from the Soviets for another six to ten years is forcing MALEV to look to Western suppliers. The aircraft Hungary is interested in contains sensitive navigational and engine technology, but it is questionable whether the embodied technology could be exploited for use in military applications. In any case, less advanced technology could be substituted in these aircraft without undermining their ability to meet Hungary's needs.

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This memorandum was requested by Barbara Griffith, Office of Eastern European and Yugoslavia Affairs, Department of State. It was prepared by [] Centraleast European Branch, Office of European Analysis; [] International Transportation Branch, Office of Global Issues; and [] Strategic Systems Branch, Office of Scientific and Weapons Research. Comments and questions are welcome and should be addressed to Chief, Centraleast European Branch, EURA []

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Hungarian Interests and Motivations

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Hungary's national airline, MALEV, has recently approached Western--including US--corporations about leasing, possibly with an option to purchase, several short-range passenger aircraft like the Boeing 737-300.

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There are several compelling reasons for this interest:

- o Malev's fleet of Soviet-manufactured airplanes is rapidly aging; six of MALEV's ten TU-134 short-range jets are over 15 years old and two are over thirteen. Six of ten TU-154 medium-range jets are over 10 years old, and all four IL-18 cargo aircraft are beyond the normal retirement age.
- o Most West European countries will impose stricter aircraft noise rules in January 1988 to conform with International Civil Aviation Organization standards. These new rules will effectively bar TU-134s and the older TU-154s from West European airspace.
- o A Soviet civil aircraft under development--the TU-204--will meet the new noise standards and MALEV's need for short-range jets, but it is not even in prototype form. We estimate that it will not be available for export until at least the mid-1990s. Accordingly, if MALEV wishes to continue aviation service to Western Europe, where all its hard currency earnings are generated, it must acquire Western aircraft. Moreover, MALEV officials would like to expand existing capacity to Western Europe to generate more hard currency income from western tourists.
- o A switch to short-range Western aircraft, which are more fuel efficient than comparable Soviet jets, would allow MALEV to reap a savings in fuel consumption and maintenance costs.

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Although MALEV's needs have been discussed in the Hungarian press for some time, MALEV has approached discussions on the acquisition of Western aircraft cautiously, probably because of hard currency shortages, concern about the possibility of a future embargo on spare parts and other support, and Soviet pressure to keep Eastern Europe a protected export territory for its aircraft.

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To get around the financial concerns, any future acquisition of Western aircraft will probably be restricted to long-term lease-purchase agreements.

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Technology Transfer Issues

MALEV's interest in the Boeing 737-300 raises the issue of technology transfer because it and other comparable aircraft, like the Airbus A-320 and the McDonnell Douglas MD-80, contain advanced navigation and flight management systems, including state-of-the-art ring laser gyro systems. Only France and the United Kingdom have also developed ring laser gyros suitable for commercial navigation. West Germany is close to having such a system, while Israel and Japan are about five years away. The Soviets also have a significant development program in ring laser gyros. A Soviet Navy supported program at the Vladikinsky Mechanical Plant resulted in the serial production of 2,000 ring laser gyros in 1979. These are, however, believed to be of lower performance and much more costly than the Honeywell GG 1342 on board the Boeing 737-300 aircraft.

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Although the technology embodied in the ring laser gyro of a civil aircraft could theoretically be disassembled and adapted for use in short-range rockets or tactical aircraft, little technology would actually be lost if Hungary were to buy western aircraft with this gyro.

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- o A critical component of the ring laser gyro is a triad of high quality mirrors, which involve high technology to produce at a low cost. Use of the ring laser gyro in civil aviation, however, will not give away the sensitive processes involved in mirror manufacture.
- o The computer technology used in the gyro's electronics is standard and there is no technology to lose here. Although the software used in the system is somewhat sensitive, it would be difficult to decipher the machine language from a commercial navigational unit. [REDACTED]

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The only other major concern about technology transfer centers on engine technology. The standard engine in the Boeing 737-300s, the CFM56-3 built in France by General Electric and SNECMA, embodies less sensitive technology than the navigational system, but is still on COCOM's controlled list. [REDACTED]

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Options

Hungary has limited options for rejuvenating its civil airfleet because only a few companies sell appropriate

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short-range jets, with the Boeing 737-300, the McDonnell-Douglas MD-80 or the European Airbus A-320 being the main competitors. Technology transfer concerns could be addressed by substituting less advanced navigational systems than the ring laser gyro or even less sophisticated engines in any of these aircraft. While substitution could degrade aircraft performance, it would not interfere with the aircrafts' ability to meet the 1988 noise standards. From the manufacturers' standpoint, modification of the aircraft would probably be easier if 20 to 30 such planes could be sold to Eastern Europe. Poland, Romania, and Czechoslovakia reportedly also have been considering buying or leasing western-manufactured aircraft. [REDACTED]

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SUBJECT: Hungarian Interest in US-Manufactured Civil Aircraft

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